

# NUTRITIONAL FOOD SCIENCE

*(Interdisciplinary course for Life Science credit)*

## **Course Description:**

Nutritional Food Science is an interdisciplinary course that has a variety of applications to everyday life. Much of the study and work in this course is directed toward providing students with knowledge of nutrition concepts and the various relationships between nutrition and science. Scientific methods are used to conduct laboratory experiments with food, applying both biology and chemistry principles. Students explore career possibilities in the field of food science. Leadership development will be provided through the Family, Career and Community Leaders of America (FCCLA) student organization.

**Grade Level:** 10-12

**Credits:** 1.0

## **Technical Content / Process**

### **Students will:**

1. identify the chemical symbols most often used in food science.
2. interpret basic science for food science such as composition of matter, atomic structure, chemical formulas and equations, and chemical/physical changes in food.
3. explore career pathways within nutritional science.
4. utilize activities of the Family, Career and Community Leaders of America (FCCLA) student organization as an integral component of course content and leadership development.
5. demonstrate employability and social skills relevant to the career cluster.
6. describe the functions / operations and maintenance of test laboratory and related equipment and supplies.
7. analyze the significance of the roles and interrelationships of microorganisms and food; benefits and disadvantages of microbial action.
8. identify the properties of acids and bases.
9. test the pH of common foods and food ingredients.
10. determine the function of water in the human body and in food preparation.
11. identify the properties and composition of lipids, carbohydrates, proteins, vitamins, and minerals and how the body utilizes each.
12. examine the effect of the breakdown and synthesis of food which are made possible by a large set of protein catalyst called enzymes.
13. analyze the breakdown of food molecules that enable the cell to store energy in specific chemicals that allow metabolic functions to occur.
14. interpret why living systems require continuous input of energy to maintain their metabolic equilibrium.
15. justify the use of additives in specific food items.
16. formulate a procedure for a food science experiment.
17. conduct scientific sensory evaluation of food.
18. examine why chemical bonds of leavening agents contain energy that is released when broken and new compounds are formed.
19. apply math, science and communication skills within technical content.

## **Connections**

- National Standards for Family and Consumer Sciences
- Partnership for 21<sup>st</sup> Century Skills
- Kentucky Core Academic Standards – Former PL/VS Program of Studies
- Common Core Standards for Mathematics and English/Language Arts
- Kentucky Occupational Skills Standards Assessment (KOSSA) Standards